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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Alf Daaland

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EXAMINER

FAYYAZ, NASHMIYA SAQIB

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,710	Applicant(s) DAALAND ET AL.	
	Examiner Nashmiya S. Fayyaz	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 23-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 23-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 23-40 and 44, the claims call for a "Means for" which should be replaced with an apparatus or system for. Further, claim 23 is very narrative and unclear. It is unclear how the device is for "condition control". Further, on line 4, "may be" is indefinite. On line 9, "its" is unclear. Overall, the claim is unclear and should be rewritten. Further, in claims 24 and 33, "the transducers" lack clear antecedent basis. In claim 27, how do the electrical elements differ from the "conducting tracks" already recited in claim 23? As to claim 29, a multiplexer is already claimed in claim 23 and "the various transducers" lack clear antecedent basis. In claim 34, on line 2, "mean" should probably be --means--. In claim 41, again it is unclear where there is *condition control* as recited in the preamble. In claims 42 and 43, on line 2, "the reflected acoustic signals" lacks antecedent basis.
3. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered

indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 23, 40 and 41, recite the broad recitation "characterization" or "properties", and the claim also recites "for example a measurement of the wall thickness" or "possible reduction of pipeline thickness" which is the narrower statement of the range/limitation. See also the recitation of "for example" in claims 27, 28.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 23-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al-US Patent # 7,253,742. As to claims 40 and 44, as best understood, Davis et al disclose a method and apparatus for measuring parameters of fluid flow within a pipe 14 with fluid flow 13, including a plurality of transducers (acoustic sensors 15) embedded in a polymer material/tape (PVDF sheet 62) which would inherently protect, an external drive, control and analysis unit (processing unit 20), and inductive connection means (connector 70), see figs. 1-5 and col. 3, lines 49 et seq. Further, it is noted that Davis et al teach a relation between the measured speed of sound and thickness, see col. 15, lines 41-51. Further, Davis et al lack a teaching for protection of the exterior of the pipe. However, there is an indication that part of the sheet-nonconductive material 68 protects the sheet 62 and the electrodes, see col.8, lines 43-47. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have recognized that the material 68 could be used to

protect the pipe also since the sheet itself is wrapped around the pipe and the protective nature is included in the sheet itself. As to claim 41-43, see recitation above with regard to claims 40 and 44, and further it is noted that Davis et al teach that the digital data and a software module (signal processor 20) which includes data acquisition unit (A/D converter), see col. 11, lines 19-22. As to claim 42, note the speed of sound processing is used which is a function of the time delay. As to claim 43, Davis et al also suggest usage of attenuation which is a function of amplitude, see col. 16, lines 27-38. As to claims 23 and 29, as best understood, note again transducers (sensors 15), pipe 14, tape (sheet 62), conducting tracks (electrodes 64/66) and connection (connector 70), see figs. 1-5 and col. 3, lines 49 et seq. Further, it is noted that Davis et al do not specifically provide for a "multiplexer" per se. However, the recitation with respect to the processing as referring to fig. 2 where the processor selects pressure sensors from the array suggest that a multiplexer would be able to perform such a selection from multiple inputs. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have indicated usage of a multiplexer in the processing unit in order to process the multiple signals from the array of sensors selectively. As to claim 24, note fig. 3 and item 11. As to claim 25, note col. 6, lines 62 et seq. As to claims 26, 28 and 33, note protective material 68. As to claim 27, note col. 8, lines 25 et seq and the description of the electrodes 64 and 66. As to claim 30, note fig. 11 indicating a temperature value,

implying usage of a thermometer. As to claim 31 and 39, duplication of parts is considered an obvious design choice in order to reduce the time required for repeatedly placing a single sensor on different parts of the pipe. As to claim 32, it is possible to use the array sheet on any part of the pipe. As to claims 34 and 35, note connector 70. As to claims 36 and 37, usage of an external cable would be obvious given the depiction of fig. 1 and figs. 3/6 which indicates a connection to processing unit and connector 70. As to claim 38, the intended usage in a subsea environment would have been an obvious matter of design choice based upon the type of pipe being tested.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashmiya S. Fayyaz whose telephone number is 571-272-2192. The examiner can normally be reached on Mondays and Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. S. F./
Examiner, Art Unit 2856
/Hezron Williams/
Supervisory Patent Examiner, Art Unit 2856